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BOYD'S FOREST DRAGON, *Goniocephalus boydii* (MACLEAY)

The warmer areas of the Old World are the home of about three hundred species of lizards, belonging to the family *Agamidae*. The lizards are called dragon lizards or dragons because of their resemblance to our popular image of a dragon. All are characterized by a rough scalation, round pupils, movable eyelids, four well developed limbs, long tail, clearly visible eardrum (except in "earless lizards"), symmetrical shields on top of the head, acrodont dentition and reproduction by eggs. These dragon lizards are diurnal.

In the New World their niche is filled by the iguanas (family *Iguanidae*). Iguanas also occur on some islands in the Old World, e.g. in Madagascar (seven species) and in the Fiji Islands (one species). It is remarkable, that where dragons are absent, their niche is filled by the iguanidae. There is no overlapping between the two families. Many dragons are provided with crests, frills or throat sacks, which enable them to put on terrifying displays.

Some of the forty or so species of the Agamid family found in Australia are migrants from northern climes. One of these species is Boyd's forest dragon (*Goniocephalus boydii*) (Fig. 1), also called Boyd's angle-headed dragon, which entered Australia from New Guinea only recently. It reaches a total length of about 50 cm (20 in.) and is found only in northern Queensland, and the rain forests of the tablelands (Fig. 2). The tail is brownish and very long, in some cases twice the length of the compressed body. There is a prominent crest on the neck and a less developed crest down the center of the back....the crests are separated from each other. The crest on the neck consists of three enlarged white spines and a number of small ones. The grey-green to yellow-green body is partially covered with small whitish spines. The pronounced gular sac (Dewlap), well developed in males, with sharp spines on the front edge, is brownish to yellowish in color. The sides of the head are decorated with large blue

Fig. 1. An adult Boyd's forest dragon, *Goniocephalus boydii*. Photograph courtesy A.I.S. (Canberra).

patches. The lizard changes color rather readily under stress of emotion. When two males encounter they will turn pale, the bodies will show a number of dark transverse bars and the gular sacs will be inflated. After erection of the nuchal and dorsal crests the two males will approach each other, bobbing their heads up and down. This performance is mostly bluff and generally, one of the males will depart before the encounter ends in actual combat.

Fig. 2. Distribution of *Goniocephalus boydii* in Australia.

Goniocephalus boydii must be considered terrestrial rather than arboreal, in spite of the fact that it has well developed limbs with strongly clawed feet. It can climb trees, but does this only in search of food. When disturbed it remains perfectly quiet until actually picked up (Dale, 1973). Its green hue makes it almost impossible to see on moss and rubbish among trees and creepers, the natural habitat of this species. It seems to rely on its camouflage, instead of retreating at the sign of danger.

The hindlegs are extraordinary long. This appears to be an adaptation for swift running. However, this particular species of forest dragon is somewhat clumsy on the ground (Worrell, 1963). Davey (1970) assumes that the large hindlimbs were evolved by ancestors which lived in open areas.

Boyd's angle-headed dragon is not common and our knowledge of this species is scanty. It is rarely seen, probably because of its cryptic coloration. Wells (1972), who visited the Atherton Tablelands near Cairns (eastern seaboard of Queensland), claims, on the contrary, that the lizards are not uncommon in that region. They were often sighted in the rainforest.

The diet consists mainly of large insects, but also includes snails, grubs, worms, and small vertebrates such as birds. *Goniocephalus boydii* is oviparous, like all Agamid lizards, and lays 2 to 5 eggs per clutch. A gravid, dead specimen examined by Wells (1972) contained 3 eggs, the largest measuring 27 mm (1.05 in.) in length and 14 mm (0.54 in.) in diameter. The female does not always cover the clutch with soil, and sometimes just deposits the eggs on the ground. The eggs hatch after an incubation period of 3 to 4 months, depending on the warmth and moisture of the surrounding sand.

There are two other species of forest dragons (genus *Goniocephalus*) occuring in Australia. One species, the rain-forest dragon (*Goniocephalus spinipes*), which grows to about 35 cm (14 in.), inhabits the remote forests of eastern Queensland and northeastern New South Wales. It is very rare. The crest on the back of the neck and back form a single row of spines, contrary to the former species.

The other species, the great crested dragon (*Goniocephalus godeffroyi*),

is restricted to the Cape York Peninsula (northern Queensland). In Australia (Bustard, 1970) it reaches a length of about 1 m (3½ ft.). It has a pronounced crest on back of the neck and a well developed one on the back continuing on to the tail. Both species are brownish dorsally with a pattern of darker spots.

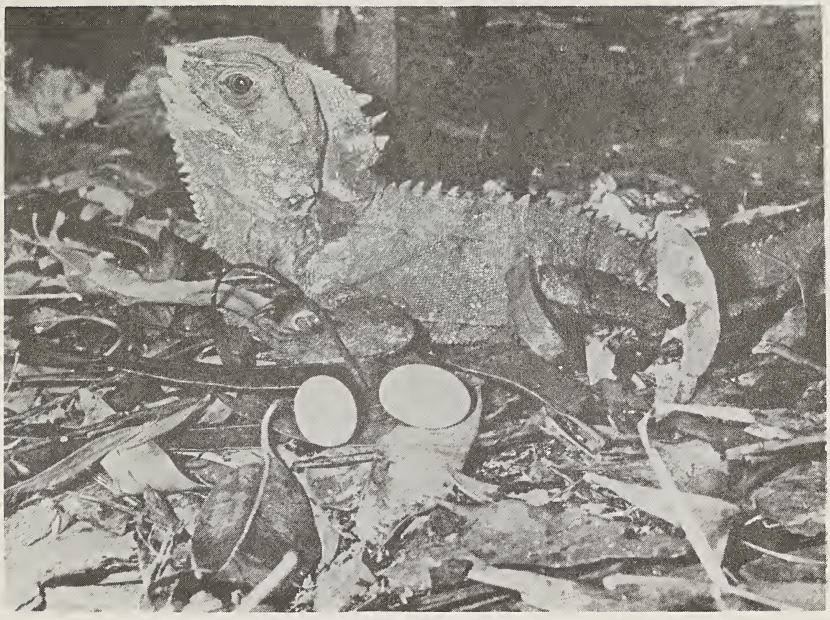

Fig. 3. *Goniocephalus boydii* with clutch.
Photograph courtesy A.I.S.

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